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Lat 41.26871 Lon -120.82522

Reply to: 3420

Date: August 28, 1995

Subject: White fir mortality on the Big Valley Ranger District, Modoc National Forest (FPM Report No. NE95-13)

To: District Ranger, Big Valley RD

On August 8, 1995, Sheri Smith, Entomologist, Forest Pest Management (FPM), conducted a field evaluation of continuing white fir mortality on the Big Valley RD, Modoc National Forest. The evaluation was conducted at the request of Bill Merrihew, Forest Silviculturist and Chris Click, District Silviculturist. In addition to Bill and Chris, Dave Schultz, FPM, Robin Petersen, FPM and Anne Mileck, Silviculturist, Devil's Garden RD, were also present. The objectives were to visit several areas on the District where white fir mortality is occurring and to review and amend the District's salvage marking guidelines if needed.

The areas we visited were in close proximity to Roney Flat, Niles Canyon, Hunters Ridge, Manzanita Ridge, and several canyons near Deer Spring Ridge. Several of these areas were evaluated by FPM last year and levels of risk were determined based on mean annual precipitation (See FPM Report NE94-2). Extreme mortality (in excess of 80% of the white fir) has occurred over the past few years in some of these locations. In most areas we visited, white fir mortality is continuing at above background levels in all age classes greater than about 6 in. DBH. The mortality is the result of several years of inadequate moisture levels, fir engraver attacks, and in some cases overstocking and the existence of off-site tree species.

The recent (trees faded this year) white fir mortality is the result of fir engraver attacks during the summer of 1994. These attacks occurred prior to the above normal precipitation experienced during the past winter (1994-1995). Salvage efforts are underway in many of these stands, however other resource values limit management alternatives in some areas. Salvage sales can minimize the economic loss and reduce the amount of fuel, however these operations will have little or no effect in reducing or controlling the fir engraver populations. Although fir engraver populations are difficult to estimate, it can be concluded that there are more bark beetles present now than before the substantial increase in fir mortality, therefore, there will be an abundant supply of beetles emerging this summer and attempting to attack trees. If the trees are able to immediately use the ample precipitation from this past winter, some attacks may be unsuccessful and levels of white fir mortality will begin to decline next year. However, experience from previous droughts indicates that it may take more than one year of adequate moisture for true fir mortality to drop to background levels.

Suggested amendments to the salvage marking guidelines were provided based on our field observations. A field training session with the marking crews has been scheduled for September to observe signs and symptoms of bark beetles on conifers and to make further amendments to the marking guidelines to facilitate the salvage efforts.

Please review FPM Report No. NE94-2 for management alternatives and for information on risk rating stands based on the annual mean precipitation. If you have any questions regarding this evaluation please contact me at (916) 257-2151.

Sheri Lee Smith
Entomologist
NE CA Shared Service Area

cc: B. Merrihew, Modoc S.O.
cc: C. Click, Big Valley RD
cc: A. Mileck, Devil's Garden RD